

Claims 1-6, 14 and 15 were rejected under 35 U.S.C. § 102 as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,054,401 to Sugiura *et al.* ("Sugiura"), U.S. Patent No. 5,990,023 to Siedel *et al.* ("Siedel"), and U.S. Patent No. 5,858,897 to Maeda *et al.* ("Maeda"), each taken alone.

As an initial matter, Applicants draw the Examiner's attention to the provisions of M.P.E.P. § 707.07(d) which state that "[t]he examiner should designate the *statutory basis* for any ground of rejection by express reference to a section of 35 U.S.C." The aforementioned rejection under 35 U.S.C. § 102 fails to set forth a particular provision of § 102 relied upon for the rejection (*i.e.*, 35 U.S.C. § 102 (a)-(g)).

Turning to Sugiura and Siedel, these references are not prior art to the present application. The present application has a PCT international filing date of March 2, 1999, and claims priority to French application no. 98/02493, filed March 2, 1998. Thus, the rejection based on Sugiura and Siedel should be withdrawn. *See* 35 U.S.C. §§ 119, 365.

Maeda is directed to a glass composition for a substrate. In the Office Action, the Examiner cited to example 8 of Maeda as showing 10.4 wt% CaO.

Applicants' presently pending claim 1 recites, *inter alia*: (1) an expansion coefficient  $\alpha$  of greater than  $100 \times 10^{-7} \text{ K}^{-1}$ ; (2) a Young's modulus  $E$  of greater than 60 GPa, and (3) a thermal conductivity  $k$  of less than 0.9 W/m.K. In contrast, example 8 of Maeda discloses a glass composition with an average thermal expansion coefficient of  $83 \times 10^{-7}/^\circ\text{C}$ . Thus, this glass composition fails to have an expansion coefficient  $\alpha$  of greater than  $100 \times 10^{-7} \text{ K}^{-1}$  as required by presently pending claim 1. Furthermore, Maeda fails to disclose a Young's modulus and thermal conductivity for the glass composition.

To anticipate a claim under 35 U.S.C. § 102, a single prior art reference must disclose each and every element of the claimed invention in a manner sufficient to enable one skilled in the art to reduce the invention to practice, thus placing the invention in possession of the public. *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554 (Fed. Cir. 1983); *In re Donohue*, 766 F.2d 531, 533 (Fed. Cir. 1985). Because Maeda fails to disclose each and every element of claim 1, Maeda fails to anticipate claim 1 or claims 2-6, 14 and 15 which depend therefrom. Thus, Applicants believe that the rejection under 35 U.S.C. § 102 should be withdrawn.

With respect to the rejection under 35 U.S.C. § 103(a), the Examiner failed to point out how the teachings of Maeda would have led one of ordinary skill in the art to a glass sheet having the claimed limitations. A *prima facie* case of obviousness is established

by showing that some objective teaching or suggestion in the applied prior art taken as a whole and/or knowledge generally available to one of ordinary skill in the art would have led that person to the claimed invention, including each and every limitation of the claims, without recourse to the teachings in Applicants' disclosure. *See generally In re Oetiker*, 977 F.2d 1443, 1447-48 (Fed. Cir. 1992) (Nies, J., concurring). Furthermore, in order to establish a *prima facie* case of obviousness of the claimed invention, the prior art as applied must be such that it would have provided one of ordinary skill in the art with both a suggestion to carry out Applicants' claimed invention and a reasonable expectation of success in doing so. *See In re Dow Chemical Co.*, 837 F.2d 469 (Fed. Cir. 1988). Because the Examiner has not particularly pointed out a suggestion in the teachings of Maeda that would have led one of ordinary skill in the art to make a glass sheet having all of the claimed properties, Applicants believe that the rejection of claims 1-6, 14 and 15 under 35 U.S.C. § 103(a) should be withdrawn.

With respect to claim 14, the Examiner stated in the Office Action that "the references teach examples where none of the conditions  $\text{Na}_2\text{O} > 18$ ,  $\text{K}_2\text{O} > 5$  and  $\text{Al}_2\text{O}_3 < 3$  therefor the condition of the other components being greater than 29% is not required."

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Applicants do not understand this statement. Presently pending claim 14 is directed to a glass sheet comprising, *inter alia*,  $\text{Na}_2\text{O} + \text{K}_2\text{O} + \text{CaO} > 29 \text{ wt\%}$ . None of the example compositions listed in Tables 1-4 of Maeda meet this limitation. Thus, Applicants believe that the rejection of claim 14 should be withdrawn.

Claims 1-6 and 9-14 were rejected in the Office Action under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,362,689 to Morimoto *et al.* ("Morimoto") directed to infrared and ultraviolet ray absorbing glass. The Examiner referred Applicants to Comparative Example 2, column 9 of the reference. The glass composition of Comparative Example 2 of Morimoto includes 1.7%  $\text{Al}_2\text{O}_3$ , 9.45%  $\text{CaO}$ , 16.1%  $\text{Na}_2\text{O}$ , and 1.0%  $\text{K}_2\text{O}$ . Because Morimoto fails to disclose details concerning the expansion coefficient  $\alpha$ , the Young's modulus, and the thermal conductivity of the glass composition of Example 2, the Comparative Example referred to by the Examiner fails to anticipate presently pending claim 1, or any of claims 2-5 and 9-14 that depend therefrom. Moreover, with respect to particular dependent claims, for example, Comparative Example 2 of Morimoto discloses a composition that fails to meet the recited limitation present in pending claims 10, 12 and 14

such that the composition has  $\text{Na}_2\text{O} + \text{K}_2\text{O} + \text{CaO} > 29\%$  when at least one of  $\text{Na}_2\text{O} > 18\%$ ,  $\text{K}_2\text{O} > 5\%$ , and  $\text{Al}_2\text{O}_3 < 3\%$ . Furthermore, because the Examiner has not particularly pointed out a suggestion in the teachings of Morimoto that would have led one of ordinary skill in the art to make a glass sheet having all of the claimed properties, Applicants believe that the rejection of claims 1-6 and 9-14 thereon under 35 U.S.C. § 103(a) should be withdrawn.

Claims 1-6, 9, 11, 13 and 16 were rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,618,763 to Frank *et al.* ("Frank") directed to alkali-zinc-silicate glass-ceramics and glasses. In the Office Action, the Examiner referred Applicants to Table 1 of the reference. Although Frank discloses compositions that fall within Applicants' claimed expansion coefficient, no disclosure is made concerning either the Young's modulus or thermal conductivity of any compositions disclosed therein. Because Frank fails to disclose each and every element of claim 1, Frank fails to anticipate claim 1 or claims 2-6, 9, 11 and 13 which depend therefrom. Thus, Applicants believe that the rejection under 35 U.S.C. § 102 should be withdrawn. Also, because the Examiner has not particularly pointed out a suggestion in the teachings of Frank that would have led one of ordinary skill in the art to make a glass sheet having all of the claimed properties, Applicants believe that the rejection of claims 1-6, 9, 11 and 13 under 35 U.S.C. § 103(a) should be withdrawn.

Finally, claims 1-16 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 6,335,300. In response, Applicants submit herewith a terminal disclaimer, with fee authorization to overcome the obviousness-type double patenting rejection of the current claims.

In view of the foregoing remarks, it is believed that the Examiner's rejections have been overcome and should be withdrawn. Thus, all current claims are submitted to be in condition for allowance, early notice of which would be appreciated. If the Examiner does not agree, then a personal or telephonic interview is respectfully requested to discuss any remaining issues and accelerate the eventual allowance of the claims.

A fee for an extension of time is believed to be due for this submission and a petition for extension of time is submitted concurrently herewith. Should any additional fees be required, please charge such fees to Pennie & Edmonds LLP Deposit Account No. 16-1150.

Respectfully Submitted,

*Seth A. Watkins*  
*FOR: Victor N. Balancia*

Date: October 28, 2002

Seth A. Watkins      Reg. No. 47,169  
For: Victor N. Balancia      Reg. No. 31,231

PENNIE & EDMONDS LLP  
1667 K Street, N.W.  
Washington, D.C. 20006  
(202) 496-4400

Enclosures

**EXHIBIT A - MARKED-UP VERSION OF AMENDED CLAIMS**

**IN AMENDMENT FILED OCTOBER 28, 2002**



3. (Amended) The glass sheet of claim 2, wherein said sheet has a specific heat of greater than [7.40] 740 J/kg.K.

4. (Amended) The glass sheet of claim 1, wherein said sheet has a specific heat of greater than [7.40] 740 J/kg.K.

9. (Amended) The glass sheet of claim 1, wherein said matrix comprises, in percentages by weight, [at least one of] Na<sub>2</sub>O and optionally K<sub>2</sub>O in amounts which satisfy the following relationship:

$$\text{Na}_2\text{O} + \text{K}_2\text{O} > 17\%.$$

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